

Off-Highway Motorcycle (OHMC) Red Sticker Assessment OHV Commission Update

May 2, 2014



1

Presentation Outline

Section 1: OHMC Assessment

Section 2: Emissions Testing

Section 3: Owner Survey

2

Section 1

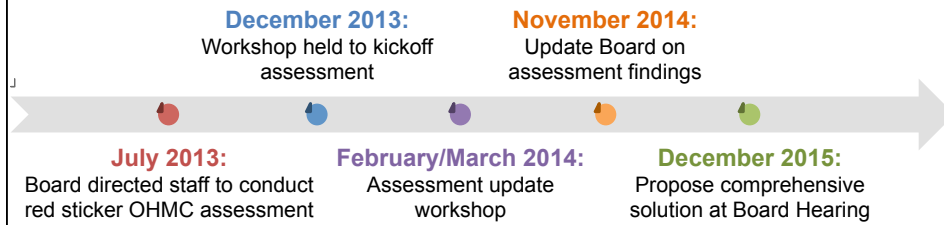
OHMC Assessment

Background

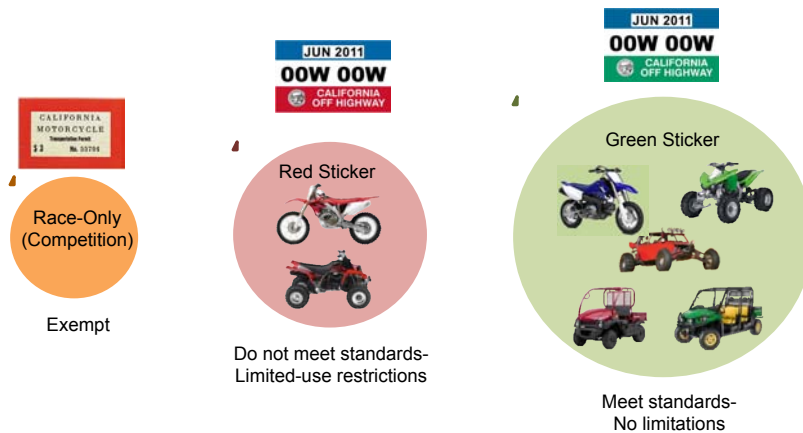
- The California Air Resources Board (Board or ARB) regulates emissions from all mobile sources
- In July 2013 the Board adopted new evaporative standards for green sticker OHVs
- Recognized need for additional assessment of red sticker OHMCs



Board-Directed OHMC Assessment



Red Sticker Program



Red Sticker OHMCs - Major Concerns

- Non-compliant OHMCs were expected to decline as compliant four-stroke models came onto the market
 - Percent of red sticker OHMC sales has increased in recent years
- High emission rates from red sticker OHMCs*
 - Up to 15x 2018 compliant OHMC evaporative emissions
 - Up to 28x 2018 compliant OHMC exhaust emissions
- Difficult for public agencies to enforce

*According to manufacturer data submitted to U.S. EPA in 2010



7

California ATV & OHMC Sales¹

Calendar Year	Green Sticker		Red Sticker		% Red Sticker Sales	
	ATV ²	OHMC	ATV	OHMC	ATV	OHMC
2005	45,918	26,031	442	13,854	1.0%	35%
2006	53,302	22,192	419	13,086	0.8%	37%
2007	39,414	13,114	36	10,210	0.1%	44%
2008	21,999	5,204	20	6,695	0.1%	56%
2009	7,338	1,308	5	3,082	0.1%	70%
2010	3,933	400	0	1,701	0.0%	81%
2011	3,402	735	0	2,217	0.0%	75%
2012	5,683	1,791	0	3,359	0.0%	65%

¹ Based on California Department of Motor Vehicles (DMV) Registration Data

² Includes both ATVs and side-by-sides



8

California ATV & OHMC Population¹

Calendar Year	Green Sticker		Red Sticker		% Red Sticker Population		Calendar Year Total
	ATV ²	OHMC	ATV	OHMC	ATV	OHMC	
2005	392,977	390,772	1,893	60,930	0.5%	13%	846,572
2006	489,717	412,287	2,593	79,625	0.5%	16%	984,221
2007	538,758	420,541	2,786	95,335	0.5%	18%	1,057,421
2008	566,442	416,774	2,820	106,186	0.5%	20%	1,092,223
2009	572,484	402,662	2,791	110,458	0.5%	22%	1,088,394
2010	571,662	392,793	2,699	124,098	0.5%	24%	1,091,251
2011	561,409	377,877	2,585	123,670	0.5%	25%	1,065,542
2012	548,778	363,429	2,466	123,449	0.4%	25%	1,038,123

¹ Based on DMV Registration Data

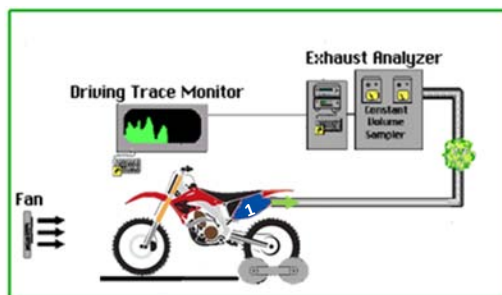
² Includes both ATVs and side-by-sides

Section 2

Emissions Testing

Emissions Testing Objectives

- Better understand OHMC evaporative and exhaust emissions
- Qualified observers nominated by OHV community
- Generate red and green sticker OHMC data for:
 - Two-stroke/four-stroke
 - Carbureted/fuel-injected
 - Unmodified/modified



OHMC Selection

- Test matrix development:
 - Based on 2004 - 2012 DMV registration data
 - 2- and 4-stroke OHMCs from the most common displacement ranges
 - Excluded discontinued models*
 - EFI OHMCs restricted to recent model years*
 - Carbureted OHMCs restricted to 3 most recent model years*
- Matrix Includes:
 - 12 red sticker and 6 green sticker OHMCs
 - 4 of the 18 OHMCs are in ARB's vehicle fleet

*Not applicable to existing ARB fleet vehicles

OHMC Procurement

- In-Use OHMCs
 - Contacting owners of makes and models in test matrix
 - Targeting newer model year OHMCs
- New OHMCs
 - Visited dealers in Southern California to rent new OHMCs
 - Have received bids for 8 red sticker OHMCs
 - Exhaust test results will be compared to green sticker OHMC certification data



Section 3

Owner Survey

OHMC Owner Survey Overview

- Objective: To better understand the vehicle characteristics, usage, and activity of OHMCs
- Population:
 - 1,250 red sticker; 750 green sticker; 500 dual sport
 - Participants randomly selected by California State University, Sacramento from the DMV database
- Outreach:
 - Online survey invitation sent out via post card and text message
 - Free day pass to SVRA provided as incentive

Owner Survey Structure

- 24 question online survey
 - Single question to appear on screen at a time
 - Specific vehicle identified at beginning of survey
- 100 participant pilot study
 - Questions may be revised based on pilot responses
- Incentive
 - Emailed to OHMC owner
 - Clear expiration date

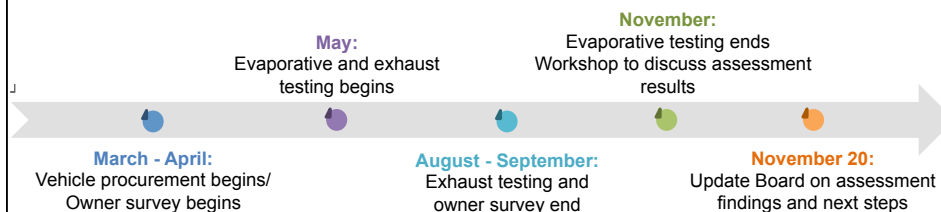


Owner Survey Significance

- The OHMC owner survey results will be used to:
 - Define where red sticker OHMCs are used and stored
 - Determine the fraction and range of OHMC modifications
 - Update the emissions inventory
- Findings on type and frequency of modifications will help ARB staff select in-use OHMCs for testing
- Results will provide better understanding of how red sticker program affects OHMC operation



Next Steps - 2014



ARB Staff Contact Information

Monitoring and Laboratory Division

- Cassie Lopina – Air Pollution Specialist – Program Lead
(916) 322-2411, clopina@arb.ca.gov
- Jim Watson – Manager
(916) 327-1282, jwatson@arb.ca.gov

For more information and to sign up for our list serve, please visit:
<http://www.arb.ca.gov/msprog/offroad/orrec/orrec.htm>

Questions?

Proposed OHMC Test Matrix

Vehicle Category	Model Year Range	Make	Model	Engine Type	Fuel Delivery System
Red Sticker OHMCs	2009 - 2014	Honda	CRF450R	4-Stroke	EFI**
	2012 - 2014	Honda	CRF150R	4-Stroke	Carbureted
	2011 - 2014	Kawasaki	KX250F	4-Stroke	EFI
	2012 - 2014	Kawasaki	KX85	2-Stroke	Carbureted
	2012 - 2014	KTM	300 XC	2-Stroke	Carbureted
	2011 - 2014	KTM	250 SX-F	4-Stroke	EFI
	2012 - 2014	KTM	SX 50	2-Stroke	Carbureted
	2008 - 2014	Suzuki	RMZ450	4-Stroke	EFI
	2010 - 2014	Yamaha	YZ450F	4-Stroke	EFI
	2012 - 2014	Yamaha	YZ250	2-Stroke	Carbureted
Green Sticker OHMCs	2012 - 2014	Yamaha	YZ125	2-Stroke	Carbureted
	2000*	Suzuki	RM250	2-Stroke	Carbureted
	2012 - 2014	Yamaha	WR450F	4-Stroke	EFI
	2012 - 2014	Honda	CRF250X	4-Stroke	Carbureted
	2012 - 2014	KTM	250XCF-W	4-Stroke	EFI
	2003*	Honda	XR50R	4-Stroke	Carbureted
	2007*	Yamaha	WR250FW	4-Stroke	Carbureted
	2007*	Honda	CRF450X7	4-Stroke	Carbureted

* ARB's Fleet Vehicles

** Electronic Fuel Injection

Alternative OHMC Test Matrix

Vehicle Category	Model Year Range	Make	Model	Engine Type	Fuel Delivery System
Red Sticker OHMCs	2011 - 2013	Honda	CFR 150 RB	4-Stroke	Carbureted
	2011 - 2013	Honda	CRF 250 R	4-Stroke	EFI
	2011 - 2013	Kawasaki	KX 450F	4-Stroke	EFI
	2011 - 2013	Kawasaki	KX 100	2-Stroke	Carbureted
	2011 - 2013	KTM	300 XC W	2-Stroke	Carbureted
	2011 - 2013	KTM	250 XC	2-Stroke	Carbureted
	2011 - 2013	KTM	250 XC W	2-Stroke	Carbureted
	2011 - 2013	KTM	250 XC F	4-Stroke	EFI
	2011 - 2013	KTM	65 SX	2-Stroke	Carbureted
	2011 - 2013	KTM	85 SX	2-Stroke	Carbureted
	2011 - 2013	Suzuki	RMZ 250	4-Stroke	EFI
	2011 - 2013	Yamaha	YZ250F	4-Stroke	Carbureted
	2011 - 2013	Yamaha	YZ85	2-Stroke	Carbureted
Green Sticker OHMCs	2011 - 2013	Honda	CRF 110F	4-Stroke	Carbureted
	2011 - 2013	Honda	CRF 100F	4-Stroke	Carbureted
	2011 - 2013	Honda	CRF 150F	4-Stroke	Carbureted
	2011 - 2013	Honda	CRF 230F	4-Stroke	Carbureted
	2011 - 2013	KTM	350 XCF-W	4-Stroke	EFI
	2011 - 2013	Yamaha	WR250F	4-Stroke	Carbureted
	2011 - 2013	Yamaha	TT-R125LE	4-Stroke	Carbureted